

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: Yushi HORIUCHI et al.

Title: SILICON/SILICON CARBIDE COMPOSITE AND PROCESS FOR  
MANUFACTURING THE SAME

Appl. No.: Unassigned

Filing Date: DEC 21 2001

Examiner: Unassigned

Art Unit: Unassigned

**PRELIMINARY AMENDMENT**

Commissioner for Patents  
Box PATENT APPLICATION  
Washington, D.C. 20231

Sir:

Prior to examination, Applicants respectfully request that the above-identified application be amended as follows:

**IN THE CLAIMS:**

In accordance with 37 C.F.R. § 1.21, please substitute for claims 3, 4, 8, 9, 11, 12 and 15 the following rewritten version of the same claims, as. The changes are shown explicitly in the attached "Version with Markings to Show Changes Made."

3. (Amended) A silicon/silicon carbide composite according to claim 1, wherein said silicon/silicon carbide composite includes a dummy wafer with a silicon carbide film having a thickness of 30 to 150  $\mu\text{m}$  formed on the surface thereof, said dummy wafer having a total thickness of 0.5 to 1 mm.

4. (Amended) A silicon/silicon carbide composite according to claim 1, said silicon/silicon carbide composite includes a semiconductor heat treatment member.

8. (Amended) A process for manufacturing a silicon/silicon carbide composite according to claim 6, wherein the length of each cellulose fiber is 1.5 mm or more.

9. (Amended) A process for manufacturing a silicon/silicon carbide composite according to claim 6, wherein said cellulose fiber is paper pulp.

11. (Amended) A process for manufacturing a silicon/silicon carbide composite according to claim 6, wherein the bulk density of the porous carbon body produced by said first step is  $0.70 \text{ g/cm}^3$  or less.

12. (Amended) A process for manufacturing a silicon/silicon carbide composite according to claim 6, in which a silicification treatment in said second step is conducted by either a reaction with fused silicon or a reaction with silicon monoxide gas.

15. (Amended) A process for manufacturing a silicon/silicon carbide composite according to claim 6, wherein the porous carbon body produced by said first step is heated at a temperature of  $1100^\circ\text{C}$  to  $2000^\circ\text{C}$  in an atmosphere of halogen gas to be purified prior to the second step.

**Please add claims 18 through 29 as follows:**

18. A silicon/silicon carbide composite according to claim 2, wherein said silicon/silicon carbide composite includes a dummy wafer with a silicon carbide film having a thickness of 30 to  $150 \text{ }\mu\text{m}$  formed on the surface thereof, said dummy wafer having a total thickness of 0.5 to 1 mm.

19. A silicon/silicon carbide composite according to claim 2, said silicon/silicon carbide composite includes a semiconductor heat treatment member.

20. A process for manufacturing a silicon/silicon carbide composite according to claim 7, wherein the length of each cellulose fiber is 1.5 mm or more.

21. A process for manufacturing a silicon/silicon carbide composite according to claim 7, wherein said cellulose fiber is paper pulp.

22. A process for manufacturing a silicon/silicon carbide composite according to claim 7, wherein the bulk density of the porous carbon body produced by said first step is  $0.70 \text{ g/cm}^3$  or less.

23. A process for manufacturing a silicon/silicon carbide composite according to claim 10, wherein the bulk density of the porous carbon body produced by said first step is  $0.70 \text{ g/cm}^3$  or less.

24. A process for manufacturing a silicon/silicon carbide composite according to claim 7, in which a silicification treatment in said second step is conducted by either a reaction with fused silicon or a reaction with silicon monoxide gas.

25. A process for manufacturing a silicon/silicon carbide composite according to claim 10, in which a silicification treatment in said second step is conducted by either a reaction with fused silicon or a reaction with silicon monoxide gas.

26. A process for manufacturing a silicon/silicon carbide composite according to claim 7, wherein the porous carbon body produced by said first step is heated at a temperature of  $1100^\circ\text{C}$  to  $2000^\circ\text{C}$  in an atmosphere of halogen gas to be purified prior to the second step.

27. A process for manufacturing a silicon/silicon carbide composite according to claim 10, wherein the porous carbon body produced by said first step is heated at a temperature of 1100°C to 2000°C in an atmosphere of halogen gas to be purified prior to the second step.

28. A process for manufacturing a silicon/silicon carbide composite according to claim 13, wherein the porous carbon body produced by said first step is heated at a temperature of 1100°C to 2000°C in an atmosphere of halogen gas to be purified prior to the second step.

29. A process for manufacturing a silicon/silicon carbide composite according to claim 14, wherein the porous carbon body produced by said first step is heated at a temperature of 1100°C to 2000°C in an atmosphere of halogen gas to be purified prior to the second step.

#### REMARKS

Applicants respectfully request that the foregoing amendments to claims 3, 4, 8, 9, 11, 12 15 and new claims 18-29 be entered in order to avoid this application incurring a surcharge for the presence of one or more multiple dependent claims.

Respectfully submitted,

Date: December 21, 2001

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**Version with Markings to Show Changes Made**

3. (Amended) A silicon/silicon carbide composite according to claim 1 [or 2], wherein said silicon/silicon carbide composite includes a dummy wafer with a silicon carbide film having a thickness of 30 to 150  $\mu\text{m}$  formed on the surface thereof, said dummy wafer having a total thickness of 0.5 to 1 mm.

4. (Amended) A silicon/silicon carbide composite according to claim 1 [or 2], said silicon/silicon carbide composite includes a semiconductor heat treatment member.

8. (Amended) A process for manufacturing a silicon/silicon carbide composite according to claim 6 [or 7], wherein the length of each cellulose fiber is 1.5 mm or more.

9. (Amended) A process for manufacturing a silicon/silicon carbide composite according to claim 6 [or 7], wherein said cellulose fiber is paper pulp.

11. (Amended) A process for manufacturing a silicon/silicon carbide composite according to claim 6[, 7 or 10], wherein the bulk density of the porous carbon body produced by said first step is 0.70 g/cm<sup>3</sup> or less.

12. (Amended) A process for manufacturing a silicon/silicon carbide composite according to claim 6[, 7, or 10], in which a silicification treatment in said second step is conducted by either a reaction with fused silicon or a reaction with silicon monoxide gas.

15. (Amended) A process for manufacturing a silicon/silicon carbide composite according to claim 6[, 7, 10, 13 or 14], wherein the porous carbon body

produced by said first step is heated at a temperature of 1100°C to 2000°C in an atmosphere of halogen gas to be purified prior to the second step.